

SEQUENCE LISTING

<110> Ajinomoto Co., Inc.

<120> Novel Glutamic Acid Receptor and the Use Thereof

<130> C013-OP1435

<140> 2002-10-23

<150> JP 2001-325159

<151> 2001-10-23

<160> 8

<170> PatentIn Ver. 2.0

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<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer

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<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer

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<212> DNA

<213> Rattus norvegicus

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<221> CDS

<222> (1)..(1755)

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15

gac	cga	tac	ttc	tcc	agc	cgc	acg	cig	gac	aac	aac	agg	cgc	aac	atc	96
Asp	Arg	Tyr	Phe	Ser	Ser	Arg	Thr	Leu	Asp	Asn	Asn	Arg	Arg	Asn	Ile	
			20					25					30			
tgg	ttt	gcc	gag	ttc	tgg	gag	gac	aac	ttc	cat	tgc	aag	tig	agc	cgc	144
Trp	Phe	Ala	Glu	Phe	Trp	Glu	Asp	Asn	Phe	His	Cys	Lys	Leu	Ser	Arg	
		35				40					45					
cac	gcg	cic	aag	aag	gga	agc	cac	atc	aag	aag	tgc	acc	aac	cga	gag	192
His	Ala	Leu	Lys	Lys	Gly	Ser	His	Ile	Lys	Lys	Cys	Thr	Asn	Arg	Glu	
	50					55					60					
cgc	atc	ggg	cag	gac	tcg	gcc	tat	gag	cag	gag	ggg	aag	gtg	cag	ttc	240
Arg	Ile	Gly	Gln	Asp	Ser	Ala	Tyr	Glu	Gln	Glu	Gly	Lys	Val	Gln	Phe	
65					70					75				80		
gtg	att	gac	gct	gtg	tac	gcc	atg	ggc	cac	gcg	cig	cac	gcc	atg	cac	288
Val	Ile	Asp	Ala	Val	Tyr	Ala	Met	Gly	His	Ala	Leu	His	Ala	Met	His	
			85					90					95			
cgt	gac	cig	tgt	ccc	ggc	cgc	gta	gga	cic	tgc	cct	cgc	atg	gac	ccc	336
Arg	Asp	Leu	Cys	Pro	Gly	Arg	Val	Gly	Leu	Cys	Pro	Arg	Met	Asp	Pro	
		100						105				110				
gtg	gat	ggc	acc	cag	cig	ctt	aag	tac	atc	agg	aac	gtc	aac	ttc	tca	384
Val	Asp	Gly	Thr	Gln	Leu	Leu	Lys	Tyr	Ile	Arg	Asn	Val	Asn	Phe	Ser	
	115					120					125					
ggc	att	gcg	ggg	aac	cct	gta	acc	ttc	aat	gag	aac	gga	gac	gca	ccg	432
Gly	Ile	Ala	Gly	Asn	Pro	Val	Thr	Phe	Asn	Glu	Asn	Gly	Asp	Ala	Pro	
	130					135					140					
ggg	cgc	tac	gac	atc	tac	cag	tac	caa	cig	cgc	aat	ggc	tcg	gcc	gag	480
Gly	Arg	Tyr	Asp	Ile	Tyr	Gln	Tyr	Gln	Leu	Arg	Asn	Gly	Ser	Ala	Glu	
145					150					155				160		
tac	aag	gtc	atc	ggc	tcg	tgg	aca	gac	cac	cig	cac	cic	aga	ata	gag	528
Tyr	Lys	Val	Ile	Gly	Ser	Trp	Thr	Asp	His	Leu	His	Leu	Arg	Ile	Glu	
			165					170				175				
cgg	atg	cag	tgg	cca	ggg	agt	ggc	cag	cag	cig	ccg	cgc	tcc	atc	tgc	576
Arg	Met	Gln	Trp	Pro	Gly	Ser	Gly	Gln	Gln	Leu	Pro	Arg	Ser	Ile	Cys	
		180						185				190				
agt	cig	ccc	tgc	cag	ccc	ggg	gag	cga	aag	aag	act	gtg	aag	ggc	atg	624
Ser	Leu	Pro	Cys	Gln	Pro	Gly	Glu	Arg	Lys	Lys	Thr	Val	Lys	Gly	Met	
	195					200					205					
gct	tgc	tgc	tgg	cac	tgc	gag	ccc	tgc	acc	ggg	tac	cag	tac	caa	gtg	672
Ala	Cys	Cys	Trp	His	Cys	Glu	Pro	Cys	Thr	Gly	Tyr	Gln	Tyr	Gln	Val	
	210					215					220					
gac	cgc	tac	acc	tgt	aag	acc	tgc	ccc	tac	gac	atg	cgg	ccc	aca	gag	720
Asp	Arg	Tyr	Thr	Cys	Lys	Thr	Cys	Pro	Tyr	Asp	Met	Arg	Pro	Thr	Glu	
225					230					235				240		
aac	cgc	acg	agc	tgc	cag	ccc	atc	ccc	atc	gtc	aag	tig	gag	tgg	gac	768

Asn	Arg	Thr	Ser	Cys	Gln	Pro	Ile	Pro	Ile	Val	Lys	Leu	Glu	Trp	Asp	
				245					250					255		
tcg	ccg	tgg	gcc	gtg	ctg	ccc	cic	ttc	ctg	gcc	gtg	gtg	ggc	atc	gcc	816
Ser	Pro	Trp	Ala	Val	Leu	Pro	Leu	Phe	Leu	Ala	Val	Val	Gly	Ile	Ala	
			260					265					270			
gcc	acg	ctg	ttc	gtg	gtg	gtc	acg	ttt	gtg	cgc	tac	aac	gat	acc	ccc	864
Ala	Thr	Leu	Phe	Val	Val	Val	Thr	Phe	Val	Arg	Tyr	Asn	Asp	Thr	Pro	
			275					280					285			
atc	gtc	aag	gcc	tcg	ggc	cgg	gaa	ctg	agc	tac	gtg	ctg	ctg	gcg	ggc	912
Ile	Val	Lys	Ala	Ser	Gly	Arg	Glu	Leu	Ser	Tyr	Val	Leu	Leu	Ala	Gly	
	290						295				300					
atc	ttt	ctg	tgc	tac	gcc	act	acc	ttc	cic	atg	atc	gca	gag	ccg	gac	960
Ile	Phe	Leu	Cys	Tyr	Ala	Thr	Thr	Phe	Leu	Met	Ile	Ala	Glu	Pro	Asp	
305					310				315						320	
ctg	ggg	acc	tgt	tcg	cic	cgc	cgc	atc	ttc	cta	ggg	ctc	ggc	atg	agc	1008
Leu	Gly	Thr	Cys	Ser	Leu	Arg	Arg	Ile	Phe	Leu	Gly	Leu	Gly	Met	Ser	
				325					330					335		
atc	agc	tac	gcg	gcc	ctg	ctg	acc	aag	acc	aac	cgc	att	tac	cgc	atc	1056
Ile	Ser	Tyr	Ala	Ala	Leu	Leu	Thr	Lys	Thr	Asn	Arg	Ile	Tyr	Arg	Ile	
			340						345					350		
ttt	gag	cag	ggc	aaa	cgg	tcg	gtc	agt	gcc	ccg	cgt	ttc	atc	agc	ccg	1104
Phe	Glu	Gln	Gly	Lys	Arg	Ser	Val	Ser	Ala	Pro	Arg	Phe	Ile	Ser	Pro	
			355					360					365			
gcc	tcg	cag	ctg	gcc	atc	acc	ttc	atc	cic	atc	tcc	ctg	cag	ctg	cic	1152
Ala	Ser	Gln	Leu	Ala	Ile	Thr	Phe	Ile	Leu	Ile	Ser	Leu	Gln	Leu	Leu	
	370						375					380				
ggc	atc	tgc	gtg	tgg	ttc	gtg	gtg	gac	ccc	tcc	cac	tcg	gtg	gtg	gac	1200
Gly	Ile	Cys	Val	Trp	Phe	Val	Val	Asp	Pro	Ser	His	Ser	Val	Val	Asp	
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ttc	cag	gac	caa	cgg	aca	ctt	gac	ccc	cgc	ttt	gcc	agg	ggc	gtg	cic	1248
Phe	Gln	Asp	Gln	Arg	Thr	Leu	Asp	Pro	Arg	Phe	Ala	Arg	Gly	Val	Leu	
				405					410					415		
aag	tgc	gac	atc	tcg	gac	ctg	tcc	cic	atc	tgc	ctg	ctg	ggc	tac	agc	1296
Lys	Cys	Asp	Ile	Ser	Asp	Leu	Ser	Leu	Ile	Cys	Leu	Leu	Gly	Tyr	Ser	
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atg	ctg	ctg	atg	gtc	acg	tgt	act	gtg	tac	gcc	atc	aag	acc	cga	ggc	1344
Met	Leu	Leu	Met	Val	Thr	Cys	Thr	Val	Tyr	Ala	Ile	Lys	Thr	Arg	Gly	
			435				440						445			
gtg	ccc	gag	acc	ttc	aac	gag	gcc	aag	ccc	atc	ggc	ttc	acc	atg	tac	1392
Val	Pro	Glu	Thr	Phe	Asn	Glu	Ala	Lys	Pro	Ile	Gly	Phe	Thr	Met	Tyr	
	450					455					460					
acc	acc	tgc	att	gtc	tgg	ctg	gcc	ttc	atc	ccc	atc	ttt	ttt	ggc	acc	1440
Thr	Thr	Cys	Ile	Val	Trp	Leu	Ala	Phe	Ile	Pro	Ile	Phe	Phe	Gly	Thr	

465		470		475		480	
tca cag tca gcc gac aag ctg tac atc cag aca acc aca ctg acg gtc	1488						
Ser Gln Ser Ala Asp Lys Leu Tyr Ile Gln Thr Thr Thr Leu Thr Val							
		485		490		495	
tcc gtg agt ctg agc gct tca gtg tcc ctg ggg atg ctc tac atg ccc	1536						
Ser Val Ser Leu Ser Ala Ser Val Ser Leu Gly Met Leu Tyr Met Pro							
		500		505		510	
aaa gtc tac atc atc ctc ttc cac ccg gag cag aac gtg ccc aag cgc	1584						
Lys Val Tyr Ile Ile Leu Phe His Pro Glu Gln Asn Val Pro Lys Arg							
		515		520		525	
aag cgc agt ctc aaa gcc gtg gtc acc gcc gcc acc atg tcc aac aag	1632						
Lys Arg Ser Leu Lys Ala Val Val Thr Ala Ala Thr Met Ser Asn Lys							
		530		535		540	
ttc aca cag aag ggc aac ttc agg ccc aat ggg gaa gcc aaa tca gag	1680						
Phe Thr Gln Lys Gly Asn Phe Arg Pro Asn Gly Glu Ala Lys Ser Glu							
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ctg tgt gag aac ctg gag acc cca gcg ctg gct acc aaa cag acc tac	1728						
Leu Cys Glu Asn Leu Glu Thr Pro Ala Leu Ala Thr Lys Gln Thr Tyr							
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gtc acc tac acc aac cat gcc atc tag	1755						
Val Thr Tyr Thr Asn His Ala Ile							
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<212> PRT

<213> Rattus norvegicus

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His Ala Leu Lys Lys Gly Ser His Ile Lys Lys Cys Thr Asn Arg Glu	
50 55 60	
Arg Ile Gly Gln Asp Ser Ala Tyr Glu Gln Glu Gly Lys Val Gln Phe	
65 70 75 80	
Val Ile Asp Ala Val Tyr Ala Met Gly His Ala Leu His Ala Met His	
85 90 95	
Arg Asp Leu Cys Pro Gly Arg Val Gly Leu Cys Pro Arg Met Asp Pro	
100 105 110	

Val	Asp	Gly	Thr	Gln	Leu	Leu	Lys	Tyr	Ile	Arg	Asn	Val	Asn	Phe	Ser		
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Gly	Ile	Ala	Gly	Asn	Pro	Val	Thr	Phe	Asn	Glu	Asn	Gly	Asp	Ala	Pro		
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Gly	Arg	Tyr	Asp	Ile	Tyr	Gln	Tyr	Gln	Leu	Arg	Asn	Gly	Ser	Ala	Glu		
145					150					155					160		
Tyr	Lys	Val	Ile	Gly	Ser	Trp	Thr	Asp	His	Leu	His	Leu	Arg	Ile	Glu		
			165						170					175			
Arg	Met	Gln	Trp	Pro	Gly	Ser	Gly	Gln	Gln	Leu	Pro	Arg	Ser	Ile	Cys		
		180					185					190					
Ser	Leu	Pro	Cys	Gln	Pro	Gly	Glu	Arg	Lys	Lys	Thr	Val	Lys	Gly	Met		
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Ala	Cys	Cys	Trp	His	Cys	Glu	Pro	Cys	Thr	Gly	Tyr	Gln	Tyr	Gln	Val		
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Asp	Arg	Tyr	Thr	Cys	Lys	Thr	Cys	Pro	Tyr	Asp	Met	Arg	Pro	Thr	Glu		
225				230						235					240		
Asn	Arg	Thr	Ser	Cys	Gln	Pro	Ile	Pro	Ile	Val	Lys	Leu	Glu	Trp	Asp		
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Ser	Pro	Trp	Ala	Val	Leu	Pro	Leu	Phe	Leu	Ala	Val	Val	Gly	Ile	Ala		
		260						265					270				
Ala	Thr	Leu	Phe	Val	Val	Val	Thr	Phe	Val	Arg	Tyr	Asn	Asp	Thr	Pro		
	275						280					285					
Ile	Val	Lys	Ala	Ser	Gly	Arg	Glu	Leu	Ser	Tyr	Val	Leu	Leu	Ala	Gly		
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Ile	Phe	Leu	Cys	Tyr	Ala	Thr	Thr	Phe	Leu	Met	Ile	Ala	Glu	Pro	Asp		
305				310						315					320		
Leu	Gly	Thr	Cys	Ser	Leu	Arg	Arg	Ile	Phe	Leu	Gly	Leu	Gly	Met	Ser		
			325					330						335			
Ile	Ser	Tyr	Ala	Ala	Leu	Leu	Thr	Lys	Thr	Asn	Arg	Ile	Tyr	Arg	Ile		
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Phe	Glu	Gln	Gly	Lys	Arg	Ser	Val	Ser	Ala	Pro	Arg	Phe	Ile	Ser	Pro		
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Ala	Ser	Gln	Leu	Ala	Ile	Thr	Phe	Ile	Leu	Ile	Ser	Leu	Gln	Leu	Leu		
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Gly	Ile	Cys	Val	Trp	Phe	Val	Val	Asp	Pro	Ser	His	Ser	Val	Val	Asp		
385				390						395					400		
Phe	Gln	Asp	Gln	Arg	Thr	Leu	Asp	Pro	Arg	Phe	Ala	Arg	Gly	Val	Leu		
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Lys	Cys	Asp	Ile	Ser	Asp	Leu	Ser	Leu	Ile	Cys	Leu	Leu	Gly	Tyr	Ser		
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Met	Leu	Leu	Met	Val	Thr	Cys	Thr	Val	Tyr	Ala	Ile	Lys	Thr	Arg	Gly		
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Val	Pro	Glu	Thr	Phe	Asn	Glu	Ala	Lys	Pro	Ile	Gly	Phe	Thr	Met	Tyr		

450		455		460															
Thr	Thr	Cys	Ile	Val	Trp	Leu	Ala	Phe	Ile	Pro	Ile	Phe	Phe	Gly	Thr				
465					470					475					480				
Ser	Gln	Ser	Ala	Asp	Lys	Leu	Tyr	Ile	Gln	Thr	Thr	Thr	Leu	Thr	Val				
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Ser	Val	Ser	Leu	Ser	Ala	Ser	Val	Ser	Leu	Gly	Met	Leu	Tyr	Met	Pro				
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Lys	Val	Tyr	Ile	Ile	Leu	Phe	His	Pro	Glu	Gln	Asn	Val	Pro	Lys	Arg				
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Lys	Arg	Ser	Leu	Lys	Ala	Val	Val	Thr	Ala	Ala	Thr	Met	Ser	Asn	Lys				
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Phe	Thr	Gln	Lys	Gly	Asn	Phe	Arg	Pro	Asn	Gly	Glu	Ala	Lys	Ser	Glu				
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Leu	Cys	Glu	Asn	Leu	Glu	Thr	Pro	Ala	Leu	Ala	Thr	Lys	Gln	Thr	Tyr				
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Val	Thr	Tyr	Thr	Asn	His	Ala	Ile												
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<212> PRT

<213> Rattus norvegicus

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Met Pro Gly Val Ser Ser Ser Leu Pro Thr Arg Met Thr Ser

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